

CLAIMS

What is claimed is:

5 1. A system for distributing network management information comprising:

10 a plurality of network devices, each of said plurality of network devices communicably coupled to at least one other one of said plurality of network devices via a network, each one of said plurality of network devices including a local database, wherein said local databases in said plurality of network devices collectively comprise a distributed database;

15 a first one of said plurality said network devices operative to store predetermined network configuration information and an associated timestamp in its local database and being further operative to transmit a first message including said predetermined network configuration information and said timestamp over said network for storage in at least one other local database in another one of said network devices; and

20 at least one network device other than said first one of said plurality of network devices being operative to receive said predetermined network configuration information and to store said information within its respective local database.

25 2. The system of claim 1 wherein said at least one network device other than said first one of said plurality of network devices is further operative to transmit a second message over said network indicating

that it has stored the predetermined network configuration information within its local database.

5 3. The system of claim 1 wherein said at least one network device other than said first one of said plurality of network devices is operative to store said predetermined network configuration information within its local database only if it has at least one predetermined characteristic in common with said first one of said network devices.

10 4. The system of claim 3 wherein said at least one network device other than said first one of said plurality of network devices is further operative to transmit a second message over said network indicating that it has stored the predetermined network configuration information within its local database.

15 5. The system of claim 4 wherein said first one of said plurality of network devices is further operative to transmit a third message to said other ones of said network devices requesting that the predetermined network configuration information be stored within each recipients local database in the event said first one of said network devices does not receive said second message within a predetermined interval following transmission of said first message, wherein said third message comprises a request to store the predetermined network configuration information within the local database of each one of said network device that receives the third

message irrespective of whether the respective receiving network device has said at least one predetermined characteristic in common with said first one of said plurality of network devices.

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6. The system of claim 1 wherein a second one of said network devices being operative to transmit a retrieval request over said network for retrieval of said predetermined network configuration, wherein at least one  
10 of said network devices that include said network management information within its respective local database is operative in response to said request to transmit said network management information and the associated timestamp over said network to said other ones  
15 of said network devices.

7. The system of claim 1 wherein at least one of said network devices other than said first one of said network devices is operative to store in the respective local  
20 database said predetermined network configuration information received at the respective network device in the event:

(a) said network management information received at the respective network device is not included within the  
25 database for that network device; or

(b) a version of the information received at the respective network device is included within the database for the receiving network device but the timestamp for the received information is more recent than the

timestamp for said version stored at said receiving device.

8. The system of claim 1 wherein at least one of said network devices other than said first one of said network devices is operative to:

identify whether the respective network device is storing a version of the predetermined network configuration information within its respective local database; and

in the event the respective network device is storing a version of the predetermined network configuration information within its local database:

(a) store in the local database the received predetermined network configuration information in the event the timestamp associated with the received predetermined network configuration information is more recent than the timestamp associated with the corresponding predetermined network configuration information within the local database; and

(b) transmit for receipt by said other ones of said network devices an update message that includes the predetermined network configuration information and the associated timestamp contained within the local database in the event the timestamp associated with the predetermined network configuration information stored within the local database is more recent than the timestamp associated with the received predetermined network configuration information.

9. The system of claim 1 wherein said first message includes a key and a value wherein said key comprises an identify a parameter and said value comprises data associated with said parameter.

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10. A method for maintaining network configuration information comprising the steps of:

including a local database in each one of a plurality of communicably coupled network devices, wherein said local databases in said network devices collectively comprise a distributed database;

at a first one of said network devices, storing predetermined network configuration information and an associated timestamp within the respective local database and transmitting a first message including said predetermined network configuration information for receipt by at least one other network device; and

storing said predetermined network configuration information and said timestamp in the local database of each one of said other network devices in the event the respective network devices have a message parameter that is common to a corresponding message parameter within said first one of said network devices.

11. The method of claim 10 further including the step of communicating a confirmation message from at least one of said other network devices to said first one of said plurality of network devices upon storage of said predetermined network configuration information within the respective local database.

12. The method of claim 10 further including the steps of:

issuing a retrieval request from a second one of  
5 said plurality of network devices to said distributed  
database for retrieval of said predetermined network  
configuration information; and

in response to receipt of said request at at least  
one of said other network devices that is storing the  
10 predetermined network configuration information within  
its local database, transmitting said information and the  
associated timestamp over said network.

13. The method of claim 12 further including the step of  
15 storing said information transmitted over said network  
and received at at least one of said other network  
devices on the respective local database in the event (a)  
said information received at the respective network  
device is not included within the local database for the  
20 respective network device; or (b) information  
corresponding to said predetermined network configuration  
is stored within the local database for the receiving  
network device but the timestamp for the received  
information is more recent than the timestamp for the  
25 corresponding predetermined network configuration  
information stored within the respective local database.

14. The method of claim 13 wherein said storing step is  
performed only if a parameter identifier within the local

database corresponds to a parameter identifier within said first one of said network devices.

15. The method of claim 10 wherein said first message  
5 includes a memory designator attribute having one of a first state and a second state, said local database within each network device includes a non-volatile memory portion and a volatile memory portion and said storing step includes the steps of storing said predetermined  
10 network configuration information in said non-volatile memory portion of said local database in the event said memory designator attribute is of said first state and storing said predetermined network configuration in said volatile memory portion of said local database in the  
15 event said memory designator attribute is of said second state.

16. A system for maintaining network configuration information comprising:

20 means for storing information in a local database in each one of a plurality of communicably coupled network devices wherein said local databases in said network devices collectively comprise a distributed database;

25 at a first one of said network devices, means for storing predetermined network configuration information and an associated timestamp within the respective local database and transmitting a first message including said predetermined network configuration information for receipt by at least one other network device; and

means for storing said predetermined network  
configuration information and said timestamp in the local  
database of each one of said other network devices in the  
event the respective network devices have a message  
5 parameter that is common to a corresponding message  
parameter within said first one of said network devices.

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